

REMARKS

This responds to the Office Action dated on September 18, 2006. Claim 30 is amended, no claims are canceled, and no claims are added. Thus, claims 1-53 remain pending in this application. Claim 30 is amended to correct a typographical error, and has now been corrected to depend on claim 29.

§102 Rejection of the Claims

Claims 1-3, 6, 12, 16 and 18 were rejected under 35 U.S.C. § 102(e) as being anticipated by Clingman et al. (U.S. Patent No. 6,994,762). Applicant respectfully traverses.

The rejection refers to element 14 in Clingman as a substrate wafer. Applicant disagrees. Clingman refers to element 14 as a steel layer, which Applicant submits is not a substrate wafer. The terms substrate and wafer refer generally to any structure on which integrated circuits are formed, and also to such structures during various stages of integrated circuit fabrication (Applicant's Specification at page 6 line 23 ff.). Steel is not a material on which integrated circuits are formed. The piezo material is adhered to the steel layer 14 using adhesive 16 when the steel layer is flexed, which Clingman indicates allows the piezo material to not fracture when the structure (including the steel layer 14) is placed in tension during aerodynamic flow control and structural energy harvesting applications (col. 1 lines 51-60).

Regarding independent claim 1, Applicant respectfully asserts that Clingman et al. does not show a method for forming a wafer as recited in the claim. Applicant is unable to find a semiconductor membrane bonded to a substrate wafer, as recited in the claim. Applicant submits the steel layer 14 of Clingman is not a substrate wafer. Applicant asserts claim 1 is in condition for allowance. Claims 2-3, 6 and 12 depend on claim 1, and are asserted to be in condition for allowance at least for the reasons provided with respect to claim 1.

Regarding independent claim 16, Applicant respectfully asserts that Clingman et al. does not show a method for forming a wafer as recited in the claim. Applicant is unable to find a portion of the substrate wafer bonded to a semiconductor layer when the substrate wafer is in the flexed position. Applicant submits the steel layer 14 of Clingman is not a substrate wafer. Applicant asserts claim 16 is in condition for allowance. Claim 18 depends on claim 16, and is

asserted to be in condition for allowance at least for the reasons provided with respect to claim 16.

Claims 28 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by Belford (U.S. Patent No. 6,514,836). Applicant respectfully traverses, and respectfully asserts that a prima facie case of anticipation has not been made using Belford because Belford does not show the elements of the claim arranged as required by the claim.

As identified in MPEP 2131:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Belford (6,514,836) refers to distinct embodiments. One embodiment is illustrated in FIG. 2 where a sheet is bonded to a membrane (Col. 3 lines 16-32). Another embodiment refers to biaxial strains using differential thermal bonding (FIGS. 3-5; Col. 3 line 36 ff.). FIGS. 6-8 are referenced when stating that standard SOI techniques can be used along with Differential Thermal Bonding Techniques to induce biaxial strain (Col. 3 lines 52-54). The SMART CUT process is identified with respect to the thermal bonding process (Col. 3 lines 63-67; *THE SOI method employed is called "SMART CUT" combining this method with differential thermal bonding is a effective way of creating strained Si on insulator (SSOI)*). The thermal bonding process does not involve flexing the substrate. Further, the SMART CUT technique is not disclosed with a techniques that flexes the substrate. Thus, Belford does not show the claimed subject matter in as complete detail as contained in the claim because the rejection relies on two distinct embodiments and Belford neither shows nor suggests these distinct embodiments as being used together. Therefore, Belford does not anticipate the claim.

With respect to independent claim 28, Applicant is unable to find in Belford a method for forming a wafer, comprising, among other things, performing a bond cut process to form a silicon membrane from a crystalline sacrificial wafer and bond a peripheral region of the substrate wafer to a peripheral region of a silicon membrane when the substrate wafer is in the

flexed position, as recited in the claim. Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of independent claim 28. Claim 29 depends on claim 28 and is asserted to be in condition for allowance for at least the reasons provided with respect to claim 28.

§103 Rejection of the Claims

Claims 4, 9-11, 17, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Clingman et al. (U.S. Patent No. 6,994,762) in view of Belford (U.S. Patent No. 6,514,836). Applicant respectfully traverses. The proposed addition of Belford to Clingman does not remedy the deficiencies of the rejection made with respect to Clingman, as identified above. Claims 4, and 9-11 depend on claim 1, and are asserted to be in condition for allowance at least for the reasons provided with respect to claim 1. Claims 17 and 19-20 depend on claim 16, and are asserted to be in condition for allowance at least for the reasons provided with respect to claim 16.

Claims 5, 21, 39-41, 44-46 and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Clingman et al. (U.S. Patent No. 6,994,762) in view of Belford (U.S. Patent No. 6,514,836) and Yamazaki et al. (U.S. Patent No. 6,902,616). Applicant respectfully traverses. The proposed addition of Belford and Yamazaki to Clingman does not remedy the deficiencies of the rejection made with respect to Clingman, as identified above. Claim 5 depends on claim 1, and is asserted to be in condition for allowance at least for the reasons provided with respect to claim 1. Claim 21 depends on claim 16, and is asserted to be in condition for allowance at least for the reasons provided with respect to claim 16.

With respect to independent claim 39, Applicant is unable to find, among other things, in the suggested combination of Clingman, Belford and Yamazaki a showing or suggestion of a method for forming a wafer where a convex contour is formed in a surface of a sacrificial crystalline wafer, and a bond cut process is performed to form an ultra-thin semiconductor membrane and bond the ultra-thin semiconductor membrane to a substrate wafer, where the ultra-thin semiconductor membrane is flattened and strained when bonded to the substrate wafer, as recited in the claim. Applicant submits there is no suggestion to use a bond cut process with a

contoured surface, and further submits that Yamazaki does not show a sacrificial crystalline wafer, as recited in the claim. Claims 40-41 depend on claim 39 and are asserted to be in condition for allowance at least for the reasons provided with respect to claim 39.

With respect to independent claim 44, Applicant is unable to find, among other things, in the suggested combination of Clingman, Belford and Yamazaki a showing or suggestion of a method for forming a transistor comprising, among other things, forming a predetermined contour in one of a semiconductor layer and a substrate wafer, and bonding the semiconductor layer to the substrate wafer and straightening the predetermined contour to induce a predetermined strain in the semiconductor layer, as recited in the claim. The proposed combination of Belford and Yamazaki do not remedy the deficiencies of the rejections in view of Clingman as identified above. Claims 45-46 depend on claim 44 and are asserted to be in condition for allowance at least for the reasons provided with respect to claim 44.

With respect to independent claim 53, Applicant is unable to find, among other things, in the suggested combination of Clingman, Belford and Yamazaki a showing or suggestion of a method for forming an electronic system comprising, among other things, forming a predetermined contour in one of a semiconductor layer and a substrate wafer, and bonding the semiconductor layer to the substrate wafer and straightening the predetermined contour to induce a predetermined strain in the semiconductor layer, as recited in the claim. The proposed combination of Belford and Yamazaki do not remedy the deficiencies of the rejections in view of Clingman as identified above.

Allowable Subject Matter

Claims 22-27, 31-38 and 47-52 were allowed.

Claims 8, 15, 30 and 42 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully submits that the base claims for claims 8, 15, 30 and 42 are in condition for allowance for the reasons provided above, and that dependent claims 8, 15, 30 and 42 are in condition for allowance in their present form with their base claims.

Reservation of the Right to Swear Behind References

Applicant maintains its right to swear behind any references which are cited in a rejection under 35 U.S.C. §§102(a), 102(e), 103/102(a) and 103/102(e). Statements distinguishing the claimed subject matter over the cited reference are not to be interpreted as admission that the references are prior art.

In the interest of clarity and brevity, Applicant has not addressed every assertion made in the office action. Applicant's silence regarding any specific assertion contained in the office action is not intended to be taken as an admission of the assertion.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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By their Representatives,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 18 day of December 2006.

LISA ROSAROLE

Name

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Signature